SEQUENCE LISTING

<110>   Ludevid, Dolores
        Torrent, Margarita
        Alvarez, Inaki
        Perez, Pascual

<120>   Amino acid-enriched plant protein reserves, particularly
        lysine-enriched maize-zein, and plants expressing such proteins

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<140>   US 09/117,246
<141>   1998-12-03

<150>   PCT/FR97/00167
<151>   1997-01-28

<150>   FR96/01004
<151>   1996-01-29

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gcc acc tcc acg cat aca agc ggc ggc tgc ggc tgc cag cca ccg ccg   96
Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
            20   25   30

ccg gtt cat cta ccg ccg ccg gtg cat ctg cca cct ccg gtt cac ctg   144

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Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
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Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
        50              55              60

cac ctg cca ccg ccg gtc cat gtg ccg ccg ccg gtt cat ctg ccg ccg        240
His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
65              70              75              80

cca cca tgc cac tac cct act caa ccg ccc cgg cct cag cct cat ccc        288
Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro
            85              90              95

cag cca cac cca tgc ccg tgc caa cag ccg cat cca agc ccg tgc cag        336
Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln
            100             105             110

ctg cag gga acc tgc ggc gtt ggc agc acc ccg atc ctg ggc cag tgc        384
Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln Cys
            115             120             125

gtc gag ttt ctg agg cat cag tgc agc ccg acg gcg acg ccc tac tgc        432
Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr Cys
    130             135             140

tcg cct cag tgc cag tcg ttg cgg cag cag tgt tgc cag cag ctc agg        480
Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu Arg
145             150             155             160

cag gtg gag ccg cag cac cgg tac cag gcg atc ttc ggc ttg gtc ctc        528
Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val Leu
            165             170             175

cag tcc atc ctg cag cag cag ccg caa agc ggc cag gtc gcg ggg ctg        576
Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly Leu
            180             185             190

ttg gcg gcg cag ata gcg cag caa ctg acg gcg atg tgc ggc ctg cag        624
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His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
65              70              75              80

Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro
             85              90              95

Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln
         100             105             110

Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln Cys
         115             120             125

Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr Cys
     130             135             140

Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu Arg
145             150             155             160

Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val Leu
             165             170             175

Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly Leu
         180             185             190

Leu Ala Ala Gln Ile Ala Gln Gln Leu Thr Ala Met Cys Gly Leu Gln
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Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
                20                  25                  30

ccg gtt cat cta ccg ccg ccg gtg cat ctg cca cct ccg gtt cac ctg       144
Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
            35                  40                  45

cca cct ccg gtg cat ctc cca ccg ccg gtc cac ctg ccg ccg ccg gtc       192
Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
        50                  55                  60

cac ctg cca ccg ccg gtc cat gtg ccg ccg ccg gtt cat ctg ccg ccg       240
His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
65                  70                  75                  80

cca cca tgc cac tac cct act caa ccg ccc cgg atc gaa ttc aaa cca       288
Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Ile Glu Phe Lys Pro
                85                  90                  95

aag cca aag ccg aag cca aaa gaa ttc aaa cca aag cca aag ccg aag       336
Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys Pro Lys
                100                 105                 110

cca aaa gaa ttc ctg cag ccc ctg cag gga acc tgc ggc gtt ggc agc       384
Pro Lys Glu Phe Leu Gln Pro Leu Gln Gly Thr Cys Gly Val Gly Ser
            115                 120                 125

acc ccg atc ctg ggc cag tgc gtc gag ttt ctg agg cat cag tgc agc       432
Thr Pro Ile Leu Gly Gln Cys Val Glu Phe Leu Arg His Gln Cys Ser
        130                 135                 140

ccg acg gcg acg ccc tac tgc tcg cct cag tgc cag tcg ttg cgg cag       480
Pro Thr Ala Thr Pro Tyr Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln
145                 150                 155                 160

cag tgt tgc cag cag ctc agg cag gtg gag ccg cag cac cgg tac cag       528
Gln Cys Cys Gln Gln Leu Arg Gln Val Glu Pro Gln His Arg Tyr Gln
                165                 170                 175

gcg atc ttc ggc ttg gtc ctc cag tcc atc ctg cag cag cag ccg caa       576
Ala Ile Phe Gly Leu Val Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln
            180                 185                 190

agc ggc cag gtc gcg ggg ctg ttg gcg gcg cag ata gcg cag caa ctg       624
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Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
            35   40   45

Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
    50   55   60

His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
65   70   75   80

Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Ile Glu Phe Lys Pro
                85   90   95

Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys Pro Lys
            100   105   110

Pro Lys Glu Phe Leu Gln Pro Leu Gln Gly Thr Cys Gly Val Gly Ser
            115   120   125

Thr Pro Ile Leu Gly Gln Cys Val Glu Phe Leu Arg His Gln Cys Ser
    130   135   140

Pro Thr Ala Thr Pro Tyr Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln
145   150   155   160

6

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Gln Cys Cys Gln Gln Leu Arg Gln Val Glu Pro Gln His Arg Tyr Gln
              165                 170                 175


Ala Ile Phe Gly Leu Val Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln
              180                 185                 190


Ser Gly Gln Val Ala Gly Leu Leu Ala Ala Gln Ile Ala Gln Gln Leu
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gcc acc tcc acg cat aca agc ggc ggc tgc ggc tgc cag cca ccg ccg        96
Ala Thr Ser Thr His Thr Ser Gly Gly Cys Gly Cys Gln Pro Pro Pro
                20                  25                  30

ccg gtt cat cta ccg ccg ccg gtg cat ctg cca cct ccg gtt cac ctg       144
Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
          35                  40                  45

cca cct ccg gtg cat ctc cca ccg ccg gtc cac ctg ccg ccg ccg gtc       192
Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
      50                  55                  60

cac ctg cca ccg ccg gtc cat gtg ccg ccg ccg gtt cat ctg ccg ccg       240
His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
65                  70                  75                  80

cca cca tgc cac tac cct act caa ccg ccc cgg cct cag cct cat ccc       288
Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro
              85                  90                  95
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7

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Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln
            100                 105                 110

atc gaa ttc aaa cca aag cca aag ccg aag cca aaa gaa ttc ctg cag        384
Ile Glu Phe Lys Pro Lys Pro Lys Pro Lys Pro Lys Glu Phe Leu Gln
            115                 120                 125

ccc ctg cag gga acc tgc ggc gtt ggc agc acc ccg atc ctg ggc cag        432
Pro Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln
    130                 135                 140

tgc gtc gag ttt ctg agg cat cag tgc agc ccg acg gcg acg ccc tac        480
Cys Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr
145                 150                 155                 160

tgc tcg cct cag tgc cag tcg ttg cgg cag cag tgt tgc cag cag ctc        528
Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu
                165                 170                 175

agg cag gtg gag ccg cag cac cgg tac cag gcg atc ttc ggc ttg gtc        576
Arg Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val
                180                 185                 190

ctc cag tcc atc ctg cag cag cag ccg caa agc ggc cag gtc gcg ggg        624
Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly
            195                 200                 205

ctg ttg gcg gcg cag ata gcg cag caa ctg acg gcg atg tgc ggc ctg        672
Leu Leu Ala Ala Gln Ile Ala Gln Gln Leu Thr Ala Met Cys Gly Leu
    210                 215                 220

cag cag ccg act cca tgc ccc tac gct gct gcc ggc ggt gtc ccc cac        720
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Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu
        35                  40                  45
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8

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Pro Pro Pro Val His Leu Pro Pro Pro Val His Leu Pro Pro Pro Val
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His Leu Pro Pro Pro Val His Val Pro Pro Pro Val His Leu Pro Pro
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Pro Pro Cys His Tyr Pro Thr Gln Pro Pro Arg Pro Gln Pro His Pro
            85          90              95

Gln Pro His Pro Cys Pro Cys Gln Gln Pro His Pro Ser Pro Cys Gln
        100          105          110

Ile Glu Phe Lys Pro Lys Pro Lys Pro Lys Pro Lys Glu Phe Leu Gln
        115          120          125

Pro Leu Gln Gly Thr Cys Gly Val Gly Ser Thr Pro Ile Leu Gly Gln
    130          135          140

Cys Val Glu Phe Leu Arg His Gln Cys Ser Pro Thr Ala Thr Pro Tyr
145          150          155          160

Cys Ser Pro Gln Cys Gln Ser Leu Arg Gln Gln Cys Cys Gln Gln Leu
        165          170          175

Arg Gln Val Glu Pro Gln His Arg Tyr Gln Ala Ile Phe Gly Leu Val
        180          185          190

Leu Gln Ser Ile Leu Gln Gln Gln Pro Gln Ser Gly Gln Val Ala Gly
        195          200          205

Leu Leu Ala Ala Gln Ile Ala Gln Gln Leu Thr Ala Met Cys Gly Leu
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1                   5                   10                  15


Pro Lys Pro Lys Pro Lys Pro Lys Pro Lys Pro Lys Pro Lys
            20                  25                  30


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Pro Lys Pro Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1               5                   10                  15


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
            20                  25                  30


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        35                  40                  45


Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
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Lys Pro Lys Pro Lys Pro Lys Pro Lys Lys Pro Lys Pro Lys Pro Lys
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Pro Lys

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Lys Pro Lys Pro Lys Pro Lys Pro Lys Glu Phe Lys Pro Lys Pro Lys
1   5   10   15

Pro Lys Pro Lys
        20